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The "Received" stamp of the Patent Office imprinted hereon acknowledges the filing of:

Applicant: John Harley

Serial & Docket No. 07/867,819 OMRF 114 CIP2

Filed: April 13, 1992

Papers Submitted:

Status Request with Certificate of Mailing under 37 CFR 1.8(a), Copy of Amendment with Exhibits A-F and Sequence Listing (hard copy), Copy of Postcard stamped "Received December 2, 1996 Matrix Customer Service Center".

Date: August 11, 1998 20487/88

By: Patrea L. Pabst, Reg. No. 31,284

SUPERIOR

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AE 8-13-98

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: John Harley

Serial No.: 07/867,819

Group Art Unit: 1813

Filed: April 13, 1992

Examiner: Caputa, A.

For: METHODS AND REAGENTS FOR DIAGNOSIS OF AUTOANTIBODIES

Assistant Commissioner for Patents
Washington, D.C. 20231

STATUS REQUEST

Dear Sir:

An Office Action was mailed December 2, 1996, in the above-identified application. A response to this Office Action, a copy of which is enclosed, was hand carried into the Patent Office on December 2, 1996. A copy of the postcard showing receipt by the Patent Office on December 2, 1996, is also enclosed.

No subsequent action in this case has been received. A telephone call to the Examiner was on March 24, 1997, regarding the status of this case. The undersigned was informed that the application had mistakenly been sent to abandoned files and would be retrieved, allowed, and sent to the issue branch. Again, there has been no action in the case.

U.S.S.N. 07/867,819
Filed: April 13, 1992
STATUS REQUEST

Please advise if the file needs further reconstruction so that the application can proceed to issuance.

Respectfully submitted,



Patrea L. Pabst
Reg. No. 31,284

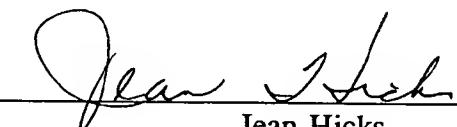
Dated: August 11, 1998
ARNALL GOLDEN & GREGORY LLP
1201 West Peachtree Street
2800 One Atlantic Center
Atlanta, Georgia 30309-3450
(404) 873-8794

Title: "METHODS AND REAGENTS FOR DIAGNOSIS OF AUTOANTIBODIES"
Filed: April 13, 1992
STATUS REQUEST

CERTIFICATE OF MAILING (37 CFR 1.8a)

I hereby certify that this STATUS REQUEST, along with any paper referred to as being attached or enclosed, is being deposited with the United States Postal Service on the date shown below with sufficient postage as first-class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Date: August 11, 1998



Jean Hicks

The "Received" stamp of the Patent Office imprinted hereon acknowledges the filing of:

Applicant: John Harley

Serial & Docket No. 07/867,819 QMRF 114 CIP(2)

Filed: April 13, 1992

Papers Submitted:

Amendment with Exhibits A-F, Sequence Listing, Sequence Listing Diskette

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U.S. CUSTOMS
SERVICE DIVISION

Date: December 2, 1996

By: Patrea L. Pabst, Reg. No. 31,284

20487/0088

DISK Mailer

AVERY TM

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For 3 1/2" DISK

Format: ASCII Date: November 27, 1996
Applicant: John Harley
Title: Methods and Reagents for Diagnosis of
Autoantibodies
U.S.S.N. 07/867,819 Filed: April 13, 1992
Computer: Gateway 2000 (IBM compatible) with
MS-DOS 5.0
Attorney: Patrea L. Pabst, Reg. No. 31,284
Arnall, Golden & Gregory
Docket No.: OMRF114cip2 20487/88



U.S.S.N. 07/867,819

 AVERY
DENNISON
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Diamond Bar, CA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: John Harley

Filed: April 13, 1992 Examiner: Caputa, A.

For: METHODS AND REAGENTS FOR DIAGNOSIS OF AUTOANTIBODIES

Assistant Commissioner for Patents
Washington, D.C. 20231

AMENDMENT

Dear Sir:

In accordance with Rules 37 C.F.R. 1.821-1.825, please amend the application as follows. Applicant believes no fee is necessary for this Amendment, however, if a fee is required, please charge Deposit Account No. 01-2507.

In the Specification

On page 24, line 22, please insert --(amino acids 4-11 of Sequence Listing ID No. 14).-- after "PPPGM[R]PP".

On page 24, line 24, please insert --(amino acids 3-10 of Sequence Listing ID No. 13).-- after "PPPGIRGP".

On page 25, line 1, please insert --(Sequence Listing ID No. 1),-- after
"GTEKAFDK"

On page 25, line 8, please insert --(amino acids 5-8 of Sequence Listing ID No. 6).-- after "POGR".

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On page 25, line 11, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 25, line 12, please insert --(amino acids 3-10 of Sequence Listing ID No. 13),-- after "PPPGIRGP".

On page 25, line 13, please insert --(Sequence Listing ID No. 119),-- after "PPPGXR".

On page 25, line 17, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 25, line 18, please insert --(amino acids 4-10 of Sequence Listing ID No. 14),-- after "PPPGMRP".

On page 25, line 22, please insert --(amino acids 4-10 of Sequence Listing ID No. 14),-- after "PPPGMRP".

On page 25, line 22, please insert --(amino acids 4-9 of Sequence Listing ID No. 14),-- after "PPPGMR".

On page 25, line 22, please insert --(amino acids 4-8 of Sequence Listing ID No. 14),-- after "PPPGM".

On page 25, line 23, please insert --(amino acids 4-7 of Sequence Listing ID No. 14),-- after "PPPG".

On page 25, line 23, please insert --(amino acids 5-8 of Sequence Listing ID No. 14),-- after "PPGM".

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On page 25, line 23, please insert --(amino acids 6-9 of Sequence Listing ID No. 14),-- after "PGMR".

On page 25, line 23, please insert --(amino acids 7-10 of Sequence Listing ID No. 14),-- after "GMRP".

On page 25, line 24, please insert --(amino acids 3-6 of Sequence Listing ID No. 14),-- after "PPPP".

On page 25, line 24, please insert --(amino acids 4-9 of Sequence Listing ID No. 14),-- after "PPPGMR".

On page 25, line 26, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 25, line 30, please insert --(Sequence Listing ID No. 120),-- after "PPPPP".

On page 25, line 30, please insert --(amino acids 1-4 of Sequence Listing ID No. 120),-- after "PPPP".

On page 25, line 34, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 26, line 11, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 26, line 17, please insert --(Sequence Listing ID No. 116),-- after "(PAPGMRPP)".

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On page 26, lines 20, 25 and 30, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 27, line 3, please insert --(Sequence Listing ID No. 117),-- after "PPPGMIPP".

On page 27, line 8, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 28, line 1, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 28, line 3, please insert --(amino acids 3-10 of Sequence Listing ID No. 13),-- after "PPPGIRGP".

On page 28, line 3, please insert --(Sequence Listing ID No. 121),-- after "PGIRGPPP".

On page 28, line 8, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 28, line 13, please insert --(Sequence Listing ID No. 122),-- after "PPPGIRPP".

On page 28, line 22, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

On page 28, line 27, please insert --(amino acids 3-10 of Sequence Listing ID No. 13),-- after "PPPGIRGP".

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On page 29, line 9, please insert --(amino acids 3-10 of Sequence Listing ID No. 13),-- after "PPPGIRGP".

On page 29, line 10, please insert --(Sequence Listing ID No. 121),-- after "PGIRGPPP".

On page 29, lines 14 and 22, please insert --(amino acids 4-11 of Sequence Listing ID No. 14),-- after "PPPGMRPP".

Please replace the Sequence Listing, pages 30-96, mailed September 9, 1993, with the enclosed Sequence Listing, pages 30-69, and renumber the remaining pages in the application to be consecutive.

In the claims

1. (four times amended) A peptide forming a linear epitope for a human autoantibody selected from the group of peptides of less than forty amino acids, wherein the sequence of the epitope begins with the amino acid numbered from the amino terminus followed by the listed amino acid sequence consisting of

the Ro/SSA epitopes: 30, MNRLHRFL (Sequence Listing ID No. 37), 37, LCFGSEGGT (Sequence Listing ID No. 38), 38, CFGSEGGT (amino acids 2-9 of Sequence Listing ID No. 38), 41, SEGGTYYIKEQ (Sequence Listing ID No. 39), 42, EGGTYYIKEQ (amino acids 2-11 of Sequence Listing ID No. 39), 44, GTYYI (amino acids 4-8 of Sequence Listing ID No. 39), 76, EIKSFSQEGRT (Sequence Listing ID No. 40), 78, KSFSQEGR (amino acids 3-10 of

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Sequence Listing ID No. 40), 81, SQEGRTTKQ (Sequence Listing ID No. 41), 84, GRTTKQEPM (Sequence Listing ID No. 42), 106, STKQAAFKAV (amino acids 2-11 of Sequence Listing ID No. 43), 105, ISTKQAAFKAVS (Sequence Listing ID No. 43), 108, KQAAFKAV (amino acids 4-11 of Sequence Listing ID No. 43), 111, AFKAVSEVC (Sequence Listing ID No. 44), 126, FTFIQFKKDLKESMK (Sequence Listing ID No. 45), 130, QFKKDLKE (amino acids 5-12 of Sequence Listing ID No. 45), 138, SMKCGMWGRA (Sequence Listing ID No. 46), 139, MKCGMWGRA (amino acids 2-10 of Sequence Listing ID No. 46), 142, GMWGRALRKAI (Sequence Listing ID No. 47), 145, GRALRKAI (amino acids 4-11 of Sequence Listing ID No. 47), 165, ALAVTKYKQRNGWSHKDLLRLSH (Sequence Listing ID No. 48), 169, TKYKQRNG (amino acids 5-12 of Sequence Listing ID No. 48), 173, QRNGWSHK (amino acids 9-16 of Sequence Listing ID No. 48), 182, LLRLSHLKPSS (Sequence Listing ID No. 49), 184, RLSHLKPS (amino acids 3-10 of Sequence Listing ID No. 49), 199, TKYITKGW (amino acids [2-9] 3-10 of Sequence Listing ID No. 71), 202, ITKGWKEV (amino acids [5-12] 6-13 of Sequence Listing ID No. 71), 210, HELYKEKA (Sequence Listing ID No. 50), 212, LYKEKALSV (Sequence Listing ID No. 51), 216, KALSVETEKLLKYL (Sequence Listing ID No. 52), 222, TEKLLKYL (amino acids 7-14 of Sequence Listing ID No. 52), 224, KLLKYLEA (Sequence Listing ID No. 53), 229, LEAVEVKVKRTKDE (Sequence Listing ID No. 54), 234, KVVKRTKDE (amino acids 6-13 of Sequence Listing ID No. 54), 257, HLLTNHLKSKEVWKALLQEMPL (Sequence Listing ID No. 55), 263, LKSKEVWK

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(amino acids 7-14 of Sequence Listing ID No. 55), 264, KSKEVWKA (amino acids 8-15 of Sequence Listing ID No. 55), 265, SKEVWK (amino acids 9-14 of Sequence Listing ID No. 55), 280 ALLRNLGKMTA (Sequence Listing ID No. 56), 283, RNLGKMT (amino acids 4-10 of Sequence Listing ID No. 56), 285, LGKMTANS (Sequence Listing ID No. 57), 308, LCNEKLLKKARIHPFHI (Sequence Listing ID No. 58), 313, LLKKARI (amino acids 6-12 of Sequence Listing ID No. 58), 315, KKARIHPF (amino acids 8-15 of Sequence Listing ID No. 58), 330, TYKTGHGLRGKLKWRPDE (Sequence Listing ID No. 59), 331, YKTGHGL (amino acids 2-8 of Sequence Listing ID No. 59), 352, ALDAAFYK (Sequence Listing ID No. 60), 355, AAFYKTFKTVEPTGKRFLLA (Sequence Listing ID No. 61), 379, ASMNQRVLGS (Sequence Listing ID No. 62), 365, EPTGKRFL (amino acids 11-18 of Sequence Listing ID No. 61), 398, AMCMVVTR (Sequence Listing ID No. 63), 414, AFSDEMVP (Sequence Listing ID No. 64), 420, VPCPVTTD (Sequence Listing ID No. 65), 433, VLMAMSQI (Sequence Listing ID No. 66), 445, TDCSLPMI (Sequence Listing ID No. 67), 449, LPMTWAQKTNTPA (amino acids 3-15 of Sequence Listing ID No. 68), 472, TFAGGVHPAI (Sequence Listing ID No. 69), 472, TFAGGVHP (amino acids 1-8 of Sequence Listing ID No. 69), 481, IALREYRKKMDIPAKL (Sequence Listing ID No. 70), 484, REYRKKMD (amino acids 4-11 of Sequence Listing ID No. 70).

12. (five times amended) A method for screening patients for autoantibodies to Ro/SSA comprising reacting a biological sample with a peptide forming a linear epitope selected from the group of peptides of less than forty amino acids, beginning with the amino

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acid numbered from the amino terminus followed by the listed amino acid sequence consisting of

the Ro/SSA epitopes: 30, MNRLHRFL (Sequence Listing ID No. 37), 37, LCFGSEGGT (Sequence Listing ID No. 38), 38, CFGSEGGT (amino acids 2-9 of Sequence Listing ID No. 38), 41, SEGGTYYIKEQ (Sequence Listing ID No. 39), 42, EGGTYYIKEQ (amino acids 2-11 of Sequence Listing ID No. 39), 44, GTYYIKEQ (amino acids 4-11 of Sequence Listing ID No. 39), 44, GTYYI (amino acids 4-8 of Sequence Listing ID No. 39), 76, EIKSFSQEGRT (Sequence Listing ID No. 40), 78, KSFSQEGR (amino acids 3-10 of Sequence Listing ID No. 40), 81, SQEGRTTKQ (Sequence Listing ID No. 41), 84, GRTTKQEPM (Sequence Listing ID No. 42), 106, STKQAAFKAV (amino acids 2-11 of Sequence Listing ID No. 43), 105, ISTKQAAFKAVS (Sequence Listing ID No. 43), 108, KQAAFKAV (amino acids 4-11 of Sequence Listing ID No. 43), 111, AFKAVSEVC (Sequence Listing ID No. 44), 126, FTFIQFKKDLKESMK (Sequence Listing ID No. 45), 130, QFKKDLKE (amino acids 5-12 of Sequence Listing ID No. 45), 138, SMKCGMWGRA (Sequence Listing ID No. 46), 139, MKCGMWGRA (amino acids 2-10 of Sequence Listing ID No. 46), 142, GMWGRALRKAI (Sequence Listing ID No. 47), 145, GRALRKAI (amino acids 4-11 of Sequence Listing ID No. 47), 165, ALAVTKYKQRNGWSHKDLLRLSH (Sequence Listing ID No. 48), 169, TKYKQRNG (amino acids 5-12 of Sequence Listing ID No. 48), 173, QRNGWSHK (amino acids 9-16 of Sequence Listing ID No. 48), 182, LLRLSHLKPSS (Sequence Listing ID No. 49), 184,

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RLSHLKPS (amino acids 3-10 of Sequence Listing ID No. 49), 199, TKYITKGW (amino acids [2-9] 3-10 of Sequence Listing ID No. 71), 202, ITKGWKEV (amino acids [5-12] 6-13 of Sequence Listing ID No. 71), 210, HELYKEKA (Sequence Listing ID No. 50), 212, LYKEKALSV (Sequence Listing ID No. 51), 216, KALSVETEKLLKYL (Sequence Listing ID No. 52), 222, TEKLLKYL (amino acids 7-14 of Sequence Listing ID No. 52), 224, KLLKYLEA (Sequence Listing ID No. 53), 229, LEAVEVKVKRTKDE (Sequence Listing ID No. 54), 234, KVVKRTKDE (amino acids 6-13 of Sequence Listing ID No. 54), 257, HLLTNHLKSKEVWKALLQEMPL (Sequence Listing ID No. 55), 263, LKSKEVWK (amino acids 7-14 of Sequence Listing ID No. 55), 264, KSKEVWK (amino acids 8-15 of Sequence Listing ID No. 55), 265, SKEVWK (amino acids 9-14 of Sequence Listing ID No. 55), 280 ALLRNLLGKMTA (Sequence Listing ID No. 56), 283, RNLGKMT (amino acids 4-10 of Sequence Listing ID No. 56), 285, LGKMTANS (Sequence Listing ID No. 57), 308, LCNEKLLKKARIHPFHI (Sequence Listing ID No. 58), 313, LLKKARI (amino acids 6-12 of Sequence Listing ID No. 58), 315, KKARIHPF (amino acids 8-15 of Sequence Listing ID No. 58), 330, TYKTGHGLRGKLKWRPDE (Sequence Listing ID No. 59), 331, YKTGHGL (amino acids 2-8 of Sequence Listing ID No. 59), 352, ALDAAFYK (Sequence Listing ID No. 60), 355, AAFYKTFKTVEPTGKRFLLA (Sequence Listing ID No. 61), 379, ASMNQRVLGS (Sequence Listing ID No. 62), 365, EPTGKRFL (amino acids 11-18 of Sequence Listing ID No. 61), 398, AMCMVVTR (Sequence Listing ID No. 63), 414, AFSDEMVP (Sequence Listing ID No. 64), 420, VPCPVTTD (Sequence Listing ID No.

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65), 433, VLMAMMSQI (Sequence Listing ID No. 66), 445, TDCSLPMI (Sequence Listing ID No. 67), 449, LPMTWAQKTNTPA (amino acids 3-15 of Sequence Listing ID No. 68), 472, TFAGGVHPAI (Sequence Listing ID No. 69), 472, TFAGGVHP (amino acids 1-8 of Sequence Listing ID No. 69), 481, IALREYRKKMDIPAKL (Sequence Listing ID No. 70), 484, REYRKKMD (amino acids 4-11 of Sequence Listing ID No. 70).

Remarks

Amendments made to the specification

The amendments made to the specification merely insert Sequence Listing ID numbers in accordance with Rule 37 C.F.R. 1.821(2)(c) and, therefore, do not add new matter.

Amendments made to the specification September 9, 1993

In a telephone conversation November 22, 1996, between the Examiner and Applicant's counsel, the Examiner requested an explanation of the amendments made to the specification in the Preliminary Amendment mailed September 9, 1993.

Sequence Listing ID numbers were placed in the application after the gene sequences they represent. This was done to comply with Rule 37 C.F.R. 1.821(2)(c). Various amino acid symbols were deleted or replaced with others solely for the purpose of correcting typographical errors made in sequences already known in the art. Amendments were also made to sequences in the claims in the Amendment mailed March 21, 1994, to match those amendments that were made to the sequences September 9, 1993. Specifically:

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AMENDMENT

(1) The first "K" in Sequence Listing ID No. 22 was deleted. Support is found in Chambers, et al., *J. Biol. Chem.*, 263:(34)18043-18051 (1988), enclosed as Exhibit A and cited in the specification at page 10, line 19. Figure 3 of Exhibit A shows the correct Sequence Listing ID No. 22 at amino acids 86-97.

(2) The "N" in Sequence Listing ID No. 71 was changed to an "IV". Support is found in Deutscher, et al., *Proc. Natl. Acad. Sci. USA*, 85:9479-9483 (1988), enclosed as Exhibit B and cited in the parent application to which this application claims priority, Serial No. 07/648,205, filed January 31, 1991, (notice of allowance mailed October 24, 1996), at page 18, lines 10 and 11, and in the grandparent application to which this application also claims priority, Serial No. 07/472,947, filed January 31, 1990, at page 19, lines 18 and 19. Figure 5 of Exhibit B shows the correct Sequence Listing ID No. 71 at amino acids 197-212.

(3) A "K" was inserted into Sequence Listing ID No. 74 after the first "G". Support is found in Spritz, et al., *Nucleic Acids Res.*, 24:10373-10391 (1987), enclosed as Exhibit C and cited in the specification at page 19, lines 4 and 5. Figure 4 of Exhibit C shows the correct Sequence Listing ID No. 74 at amino acids 132-145.

(4) The first "V" in Sequence Listing ID No. 75 was deleted. Support is found in Spritz, et al., *Nucleic Acids Res.*, 24:10373-10391 (1987), enclosed as Exhibit C and cited in the specification at page 19, lines 4 and 5. Figure 4 of Exhibit C shows the correct Sequence Listing ID No. 74 at amino acids 161-174.

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(5) The "O" in Sequence Listing ID Nos. 6, 48, 62, 85, 90, and 94 was replaced with a "Q". It is well known in the art that "Q" represents glutamine whereas "O" is not representative of an amino acid. Therefore, one skilled in the art would consider "O" in a sequence of amino acids to be a typographical error. However, support for the correct sequences is found as follows.

Sequence Listing ID No. 6 is correctly shown at amino acids 140-151 of Figure 3 in Rokeach, et al., *J. Biol. Chem.*, 264:5024-5030 (1988), enclosed as Exhibit D and cited in the specification at page 21, lines 1 and 2.

Sequence Listing ID No. 48 is correctly shown at amino acids 165-187 of Figure 5 of Deutscher, et al., *Proc. Natl. Acad. Sci. USA*, 85:9479-9483 (1988), enclosed as Exhibit B.

Sequence Listing ID No. 62 is correctly shown at amino acids 379-388 of Figure 5 of Deutscher, et al., *Proc. Natl. Acad. Sci. USA*, 85:9479-9483 (1988), enclosed as Exhibit B.

Sequence Listing ID No. 85 is correctly shown at amino acids 44-56 of Figure 5 of Sillekens, et al., *EMBO J.*, 6:3841-3848 (1987), enclosed as Exhibit E and cited in the specification at page 20, line 1.

Sequence Listing ID No. 90 is correctly shown at amino acids 263-270 of Figure 5 of Sillekens, et al., *EMBO J.*, 6:3841-3848 (1987), enclosed as Exhibit E.

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Sequence Listing ID No. 94 is correctly shown at amino acids 56-64 of Figure 4 of Sillekens, et al., *Nucleic Acids Res.*, 25:8307-8321 (1988), enclosed as Exhibit F and cited in the specification at page 20, line 9.

Amendments made to the Sequence Listing

The enclosed Sequence Listing is similar to the one mailed September 9, 1993, with the following changes.

(1) The correspondence address in the general information section has been updated.

(2) Sequence Listing ID Nos. 119-122 have been added to the Sequence Listing. Sequence Listing ID No. 119 is found on page 24, line 13 of the specification. Sequence Listing ID No. 120 is found on page 25, line 30 of the specification. Sequence Listing ID No. 121 is found on page 28, line 3 and page 29, line 10 of the specification. Sequence Listing ID No. 122 is found on page 28, line 13 of the specification.

(3) Sequence Listing ID No. 71 has been corrected to include an "Ile" before "Val" at amino acid position 1. Support for this sequence amendment is found at page 18, last line, as amended September 9, 1993, when the "N" was changed to "IV". As explained above, the correct sequence beginning with "Ile" is shown beginning at amino acid 197 in Figure 5 of Deutscher, et al., *Proc. Natl. Acad. Sci. USA*, 85:9479-9483 (1988), enclosed as Exhibit B.

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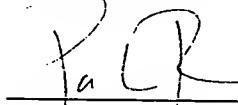
Amendments made to the claims

Since Sequence Listing ID No. 71 has been corrected to include "Ile" at position 1 of the sequence, as explained above, the numbering of amino acids of Sequence Listing ID No. 71 in claims 1 and 12 has been amended to correspond to the correct numbering. Specifically, "2-9" has been changed to "3-10" and "5-12" has been changed to "6-13".

Declaration Under 37 C.F.R. §1.821

I declare that the material on the diskette is the same as the enclosed paper copy of the Sequence Listing, that the Sequence Listing does not add new matter to the application, and that all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements may jeopardize the validity of the application or any patent issuing based thereon.

Respectfully submitted,



Patrea L. Pabst
Reg. No. 31,284

Dated: November 27, 1996
ARNALL GOLDEN & GREGORY
1201 West Peachtree Street
2800 One Atlantic Center
Atlanta, Georgia 30309-3450
(404) 873-8794

APPENDIX: Claims as Pending

1. (four times amended) A peptide forming a linear epitope for a human autoantibody selected from the group of peptides of less than forty amino acids, wherein the sequence of the epitope begins with the amino acid numbered from the amino terminus followed by the listed amino acid sequence consisting of

the Ro/SSA epitopes: 30, MNRLHRFL (Sequence Listing ID No. 37), 37, LCFGSEGGT (Sequence Listing ID No. 38), 38, CFGSEGGT (amino acids 2-9 of Sequence Listing ID No. 38), 41, SEGGTYYIKEQ (Sequence Listing ID No. 39), 42, EGGTYYIKEQ (amino acids 2-11 of Sequence Listing ID No. 39), 44, GTYYIKEQ (amino acids 4-11 of Sequence Listing ID No. 39), 44, GTYYI (amino acids 4-8 of Sequence Listing ID No. 39), 76, EIKSFSQEGRT (Sequence Listing ID No. 40), 78, KSFSQEGR (amino acids 3-10 of Sequence Listing ID No. 40), 81, SQEGRTTKQ (Sequence Listing ID No. 41), 84, GRTTKQEPM (Sequence Listing ID No. 42), 106, STKQAAFKAV (amino acids 2-11 of Sequence Listing ID No. 43), 105, ISTKQAAFKAVS (Sequence Listing ID No. 43), 108, KQAAFKAV (amino acids 4-11 of Sequence Listing ID No. 43), 111, AFKAVSEVC (Sequence Listing ID No. 44), 126, FTFIQFKKDLKESMK (Sequence Listing ID No. 45), 130, QFKKDLKE (amino acids 5-12 of Sequence Listing ID No. 45), 138, SMKCGMWGRA (Sequence Listing ID No. 46), 139, MKCGMWGRA (amino acids 2-10 of Sequence Listing ID No. 46), 142, GMWGRALRKAIA (Sequence Listing ID No. 47), 145, GRALRKAI (amino acids 4-11 of Sequence Listing ID No. 47), 165, ALAVTKYKQRNGWSHKDLLRLSH (Sequence Listing ID No. 48), 169, TKYKQRNG (amino acids 5-12 of Sequence Listing ID No. 48), 173, QRNGWSHK (amino acids 9-16 of Sequence Listing ID No. 48), 182, LLRLSHLKPSS (Sequence Listing ID No. 49), 184, RLSHLKPS (amino acids 3-10 of Sequence Listing ID No. 49), 199, TKYITKGW (amino acids [2-9] 3-10 of Sequence Listing ID No. 71), 202, ITKGWKEV (amino acids [5-12] 6-13 of Sequence Listing ID No. 71), 210, HELYKEKA (Sequence Listing ID No. 50), 212, LYKEKALSV (Sequence Listing ID No. 51), 216, KALSVETEKLKYL (Sequence Listing ID No. 52), 222, TEKLLKYL (amino acids 7-14 of Sequence Listing ID No. 52), 224, KLLKYLEA (Sequence Listing ID No. 53), 229, LEAVEVKVRTKDE (Sequence Listing ID No. 54), 234, KVVRTKDE (amino acids 6-13 of Sequence Listing ID No. 54), 257, HLLTNHLKSKEVWKALLQEMPL (Sequence Listing ID No. 55), 263, LKSKEVWK (amino acids 7-14 of Sequence Listing ID No. 55), 264, KSKEVWK (amino acids 8-15 of Sequence Listing ID No. 55), 265, SKEVWK (amino acids 9-14 of Sequence Listing ID No. 55), 280 ALLRNLGKMTA (Sequence Listing ID No. 56), 283, RNLGKMT (amino acids 4-10 of Sequence Listing ID No. 56), 285, LGKMTANS (Sequence Listing ID No. 57), 308, LCNEKLLKKARIHPFHI (Sequence Listing ID No. 58), 313, LLKKARI (amino acids 6-12 of Sequence Listing ID No. 58), 315, KKARIHPF (amino acids 8-15 of Sequence Listing ID No. 58), 330, TYKTGHGLRGKLKWRPDE (Sequence Listing ID No. 59), 331, YKTGHGL (amino acids 2-8 of Sequence Listing ID No. 59), 352, ALDAAFYK (Sequence Listing ID No. 60), 355, AAFYKTFKTVPTGKRFLLA (Sequence Listing ID No. 61), 379,

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ASMNQRVLGS (Sequence Listing ID No. 62), 365, EPTGKRFL (amino acids 11-18 of Sequence Listing ID No. 61), 398, AMCMVVTR (Sequence Listing ID No. 63), 414, AFSDEMVP (Sequence Listing ID No. 64), 420, VPCPVTTD (Sequence Listing ID No. 65), 433, VLMAMSQI (Sequence Listing ID No. 66), 445, TDCSLPMI (Sequence Listing ID No. 67), 449, LPMIWAQKTNTPA (amino acids 3-15 of Sequence Listing ID No. 68), 472, TFAGGVHPAI (Sequence Listing ID No. 69), 472, TFAGGVHP (amino acids 1-8 of Sequence Listing ID No. 69), 481, IALREYRKKMDIPAKL (Sequence Listing ID No. 70), 484, REYRKKMD (amino acids 4-11 of Sequence Listing ID No. 70).

2. (twice amended) A peptide of claim 1 consisting of between four and twenty five amino acids.

3. (twice amended) A peptide of claim 2 reactive with anti-Ro/SSA polyclonal antibodies.

10. (twice amended) A peptide of claim 1 labelled with a compound selected from the group consisting of dyes, fluorescent labels, chemiluminescent labels, enzymes, and radioactive labels.

11. (twice amended) A peptide of claim 1 immobilized onto a substrate.

12. (five times amended) A method for screening patients for autoantibodies to Ro/SSA comprising reacting a biological sample with a peptide forming a linear epitope selected from the group of peptides of less than forty amino acids, beginning with the amino acid numbered from the amino terminus followed by the listed amino acid sequence consisting of

the Ro/SSA epitopes: 30, MNRLHRFL (Sequence Listing ID No. 37), 37, LCFGSEGGT (Sequence Listing ID No. 38), 38, CFGSEGGT (amino acids 2-9 of Sequence Listing ID No. 38), 41, SEGGTYYYIKEQ (Sequence Listing ID No. 39), 42, EGGTYYIKEQ (amino acids 2-11 of Sequence Listing ID No. 39), 44, GTYYIKEQ (amino acids 4-11 of Sequence Listing ID No. 39), 44, GTYYI (amino acids 4-8 of Sequence Listing ID No. 39), 76, EIKSFSQEGRT (Sequence Listing ID No. 40), 78, KSFSQEGR (amino acids 3-10 of Sequence Listing ID No. 40), 81, SQEGRTTKQ (Sequence Listing ID No. 41), 84, GRTTKQEPM (Sequence Listing ID No. 42), 106, STKQAAFKAV (amino acids 2-11 of Sequence Listing ID No. 43), 105, ISTKQAAFKAVS (Sequence Listing ID No. 43), 108, KQAAFKAV (amino acids 4-11 of Sequence Listing ID No. 43), 111, AFKAVSEVC (Sequence Listing ID No. 44), 126, FTFIQFKKDLKESMK (Sequence Listing ID No. 45), 130, QFKKDLKE (amino acids 5-12 of Sequence Listing ID No. 45), 138, SMKCGMWGRA (Sequence Listing ID No. 46), 139, MKCGMWGRA (amino acids 2-10 of Sequence Listing ID No. 46), 142, GMWGRALRKAIA (Sequence Listing ID No. 47), 145, GRALRKAI (amino acids 4-11 of Sequence Listing ID No. 47), 165, ALAVTKYKQRNGWSHKDLLRLSH (Sequence Listing ID No. 48), 169, TKYKQRNG (amino acids 5-12 of Sequence Listing ID No. 48), 173, QRNGWSHK (amino acids 9-16 of Sequence Listing ID No. 48), 182, LLRLSHLKPSS (Sequence Listing ID No. 49), 184, RLSHLKPS (amino acids 3-10 of Sequence Listing ID No. 49), 199, TKYITKGW (amino

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3-10 of Sequence Listing ID No. 71), 202, ITKGWKEV (amino acids [5-12] 6-13
x Listing ID No. 71), 210, HELYKEKA (Sequence Listing ID No. 50), 212,
LSV (Sequence Listing ID No. 51), 216, KALSVETEKKLLKYL (Sequence Listing
, 222, TEKLLKYL (amino acids 7-14 of Sequence Listing ID No. 52), 224,
3A (Sequence Listing ID No. 53), 229, LEAVEKVKRTKDE (Sequence Listing ID
34, KVKRTKDE (amino acids 6-13 of Sequence Listing ID No. 54), 257,
LKSKEVWKALLQEMPL (Sequence Listing ID No. 55), 263, LKSKEVWK
ds 7-14 of Sequence Listing ID No. 55), 264, KSKEVWK (amino acids 8-15 of
Listing ID No. 55), 265, SKEVWK (amino acids 9-14 of Sequence Listing ID No.
LLRNLLGKMTA (Sequence Listing ID No. 56), 283, RNLGKMT (amino acids 4-
ience Listing ID No. 56), 285, LGKMTANS (Sequence Listing ID No. 57), 308,
KKARIHPFHI (Sequence Listing ID No. 58), 313, LLKKARI (amino acids 6-12
x Listing ID No. 58), 315, KKARIHPF (amino acids 8-15 of Sequence Listing ID
330, TYKTGHGLRGKLWKRDPDE (Sequence Listing ID No. 59), 331, YKTGHGL
ids 2-8 of Sequence Listing ID No. 59), 352, ALDAAFYK (Sequence Listing ID
355, AAFYKTFKTVPTGKRFLLA (Sequence Listing ID No. 61), 379,
VLGS (Sequence Listing ID No. 62), 365, EPTGKRFL (amino acids 11-18 of
Listing ID No. 61), 398, AMCMVVTR (Sequence Listing ID No. 63), 414,
VP (Sequence Listing ID No. 64), 420, VPCPVTTD (Sequence Listing ID No.
VLMAMMSQI (Sequence Listing ID No. 66), 445, TDCSLPMI (Sequence Listing
, 449, LPMIWAQKTNTPA (amino acids 3-15 of Sequence Listing ID No. 68),
GGVHPAI (Sequence Listing ID No. 69), 472, TFAGGGVHP (amino acids 1-8 of
Listing ID No. 69), 481, IALREYRKKMDIPAKL (Sequence Listing ID No. 70),
RKKMD (amino acids 4-11 of Sequence Listing ID No. 70).

13. (twice amended) The method of claim 12 wherein the peptide is labelled
npound selected from the group consisting of dyes, fluorescent labels,
inescent labels, enzymes, and radioactive labels.

15. The method of claim 14 further comprising detecting autoantibodies in the
mple.

16. (three times amended) The method of claim 15 further comprising
; the prognosis of the patient based on the reactivity of the patient sample with the
peptides.

Date:
By: Patr